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Mites of the Genus *Pachylaelaps* Berlese (Acari, Mesostigmata,
Pachylaelapidae) in Japan (I)

With 2 Text-figures

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ABSTRACT Two new species belonging to the genus *Pachylaelaps* Berlese are described under the names of *P. ishizuchiensis* sp. nov. and *P. daruma* sp. nov. Pachylaelapid mites are recorded for the first time from Japan.

The family Pachylaelapidae Berlese is a small group of mesostigmatid mites comprising three genera, *Pachylaelaps* Berlese, 1888, *Sphaerolaelaps* Berlese, 1903, and *Olopachys* Berlese, 1910. The former was originally erected for *Gamasus pectinifer* Canestrini, 1881, and was repeatedly dealt with by many authors, *e. g.*, Evans (1956) on British species, Hirschmann (1965) on the world-wide basis, Bregetova (1967) on Russian forms, Costa (1970) on Israeli ones, Karg (1971) on European ones, and so on. In the present paper, the author is going to record the genus for the first time from Japan, on the basis of two new species, *Pachylaelaps ishizuchiensis* and *P. daruma*. The other genera have not been met with until now from any part of Japan.

The type-series of the two new species are deposited in the collection of the Biological Laboratory, Matsuyama Shinonome Junior College, Matsuyama.

***Pachylaelaps ishizuchiensis* sp. nov.**

[Japanese name: Ishizuchi-Darumadani]

(Fig. 1)

Type-series. Holotype (MSJC-BL 139): ♀, ex litter of *Fagus crenata* Blume, Tsuchigoya, Mt. Ishizuchi, Ehime Pref., 17-VIII-1970, K. Ishikawa leg. Allotype: ♂, same data as the holotype. Paratypes: 1 ♀, same data as the holotype; 5 ♀♀, ex litter of *Betula Ermani* Cham., Mt. Ishizuchi, 8-VI-1969, K. Ishikawa leg.; 1 ♀, 1 ♂, ex litter of *Abies firma* Sieb. et Zucc. and *Tsuga Sieboldii* Carr., Omogo, Mt. Ishizuchi, 11-VIII-1969, K. Ishikawa leg.; 3 ♀, 2 ♂, ex litter of *Abies homolepis* Sieb. et Zucc., Tsuchigoya, Mt. Ishizuchi, 17-VIII-1970, K. Ishikawa leg.; 1 ♀, 1 ♂, ex

litter of *Fagus crenata* Blume, Jôju, Mt. Ishizuchi, 17–VIII–1970, K. Ishikawa leg.

Female. Dorsum. Length of dorsal shield with a range of 435–500 μ , av. 468 μ ; width at the level of coxae IV with a range of 238–294 μ , av. 273 μ . Dorsal shield entire, reticulated, and provided with thirty pair of simple setae. Setae *i4* shorter than the distance between bases of setae *i4* and *z2*. Setae *I1* shorter than the distance between bases of setae *I1* and *I2*. Setae *I4* longer than setae *i4*. Length of setae: verticals 15 μ , *s1* 17 μ , *i3* 27 μ , *i4* 25 μ , *I1* 30 μ , *I3* 32 μ , *I4* 35 μ and *I5* 20 μ . The distribution and relative length of the setae are as shown in Fig. 1–G.

Venter. Tritosternum well developed, with an elongated tritosternal base and a pair of pilose laciniae. Sternal shield much longer than wide, reaching the middle of coxae IV, and coalesced with metasternal and endopodal shields. Sternal shield provided with four pair of simple setae and five pair of pores. Genito-ventral shield slightly longer than wide (175 $\times$ 168 μ) and its length/width ratio is approximately 1.4. Anal shield subtriangular (65 $\times$ 93 μ), bearing three perianal setae. Metapodal shield narrow and elongate. Integument bearing thirteen pair of simple setae. Stigmata located at the anterior angles of coxae IV. Peritremes extending beyond coxae I, not reaching the base of setae *r1*. Peritrematal-podal shield extending beyond coxae IV, and partly fused with genito-ventral shield.

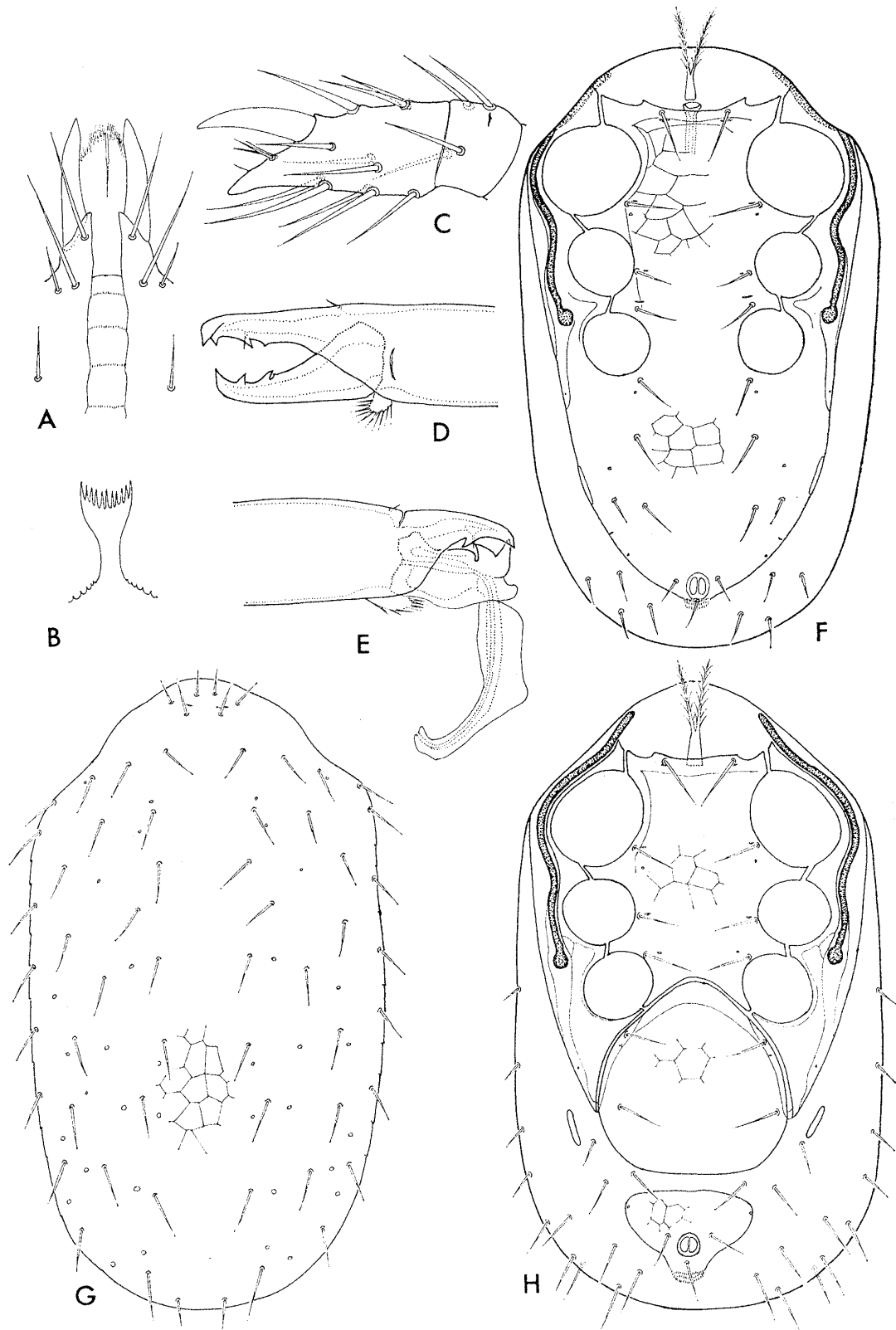
Gnathosoma. Epistome bearing a spinose median projection. Pedipalp five-segmented, palpal apotele on palpal tarsus with three tines. Fixed digit of chelicera provided with three teeth and a pilus dentilis; movable digit (50 μ) bidentate. Corniculi narrow, elongate, 35 μ in length. Length of rostral setae 35 μ , internal posterior rostrals 39 μ , external posterior rostrals 12 μ and deutosternals 13 μ .

Legs. Each tarsus provided with well developed claws and pulvilli. Tarsus II bears a single stout spur. Length of legs (excluding pretarsus), I 350 μ , II 335 μ , III 275 μ and IV 345 μ .

Male. Length of dorsal shield with a range of 395–453 μ , av. 424 μ ; width at the level of coxae IV with a range of 205–252 μ , av. 237 μ ; smaller than the female. Dorsal chaetotaxy and reticulation similar to those of female. Sterno-genital shield fused with endopodal and ventri-anal shields to form a holovenral shield, which bears eight pair of simple setae in addition to a pair of adanal setae and a post-anal seta. Sternal setae *v1* and *v2* longer than the others. Genital orifice situated on the anterior margin of sterno-genital shield. Fixed digit of chelicera bears a large tooth and a pilus dentilis, and movable digit (30 μ) has a large tooth and a long spermatophoral process, the ratio of process/movable digit being approximately 1.7. Length of legs (excluding pretarsus), I 345 μ , II 352 μ , III 248 μ and IV 333 μ . Femur II provided with a large thumb-like spur, and tarsus II with two stout spur.

Notes. The present species is readily distinguished from *Pachylaelaps virago* Berlese, 1920, from Italy by the length of seta *I5*, which is shorter than *i4* and longer than a half of *i4*. This species has so far been found only in the Ishizuchi area.

Fig. 1. *Pachylaelaps ishizuchiensis* sp. nov. (A–D, G, H female; E–F male). — A, Venter of gnathosoma; B, epistome; C, tarsus II; D–E, chelicera; F, venter; G, dorsum; H, venter.



Pachylaelaps daruma sp. nov.

[Japanese name: Minami-Darumadani]

(Fig. 2)

Type-series. Holotype (MSJC-BL 140): ♀, Ishii, Tokushima Pref., 12-IV-1969, M. Sakai leg. Paratypes: 2 ♀♀, same data as the holotype; 12 ♀♀, Satamisaki, Kagoshima Pref., 14-IV-1969, F. Harunami leg.; 2 ♀♀, Tokunoshima Is., Ryukyus, 15-IV-1969, S. Tokutomi leg.

Female. Dorsum. Length of dorsal shield with a range of 629–670 μ , av. 651 μ ; width at the level of coxae IV with a range of 425–495 μ , av. 463 μ . Dorsal shield entire, weakly reticulated, and provided with thirty pair of simple setae. Setae *i4* as long as the distance between bases of setae *i4* and *z2*. Length of setae *I1* longer than the distance between bases of setae *I1* and *I2*. Setae *I5* distinctly shorter than half the length of setae *I4*. Length of setae: verticals 35 μ , *i3* 55 μ , *i4* 60 μ , *i5* 63 μ , *I1* 63 μ , *I2* 75 μ , *I3* 63 μ , *I4* 37 μ and *I5* 29 μ . The distribution and relative length of the setae are as shown in Fig. 2–E.

Venter. Tritosternum well developed, a pair of long pilose laciniae longer than tritosternal base. Sternal shield fused with metasternal and endopodal shields, bearing four pair of simple setae and five pair of pores. Genito-ventral shield wider than long (250 $\times$ 225 μ), and its length/width ratio is approximately 1.11. Anal shield subtriangular (125 $\times$ 90 μ), provided with a pair of adanal and a postanal setae. Metapodal shield narrow and elongate, located as illustrated. Interscutal membrane between dorsal and ventral shields bearing twelve pair of simple setae. Stigmata situated at a level between coxae III and IV. Peritremes extending anteriorly beyond coxae I and base of seta *r1*. Peritrematal-podal shield extending well beyond coxae IV, and fused with genito-ventral shield at its widest point.

Gnathosoma. Epistome with a median denticulate bifurcate process. Pedipalp composed of five segments; apotele on palpal tarsus three-tined. Fixed digit of chelicera bearing two large and a small teeth, and a pilus dentilis; movable digit (83 μ in length) bidentate. Corniculi short and broad-based, 62 μ in length. Length of rostral setae 45 μ , internal posterior rostrals 50 μ , external posterior rostrals 30 μ and deutosternals 33 μ .

Legs. Each tarsus with well developed claws and pulvilli. Tarsus II with a single stout spur. Length of legs (excluding pretarsus), I 583 μ , II 512 μ , III 425 μ and IV 568 μ .

Male. Unknown.

Notes. The present species is easily distinguished from *Pachylaelaps facetus* Hirschmann et Krauss, 1965, by the length of *i5*, which is shorter than the distance between *i5* and *I1*. From *Pachylaelaps strigifer* Berlese, 1920, from Italy, it is distinguished by the length of *i5*, which is longer than one-third the distance between *i5* and *I1*.

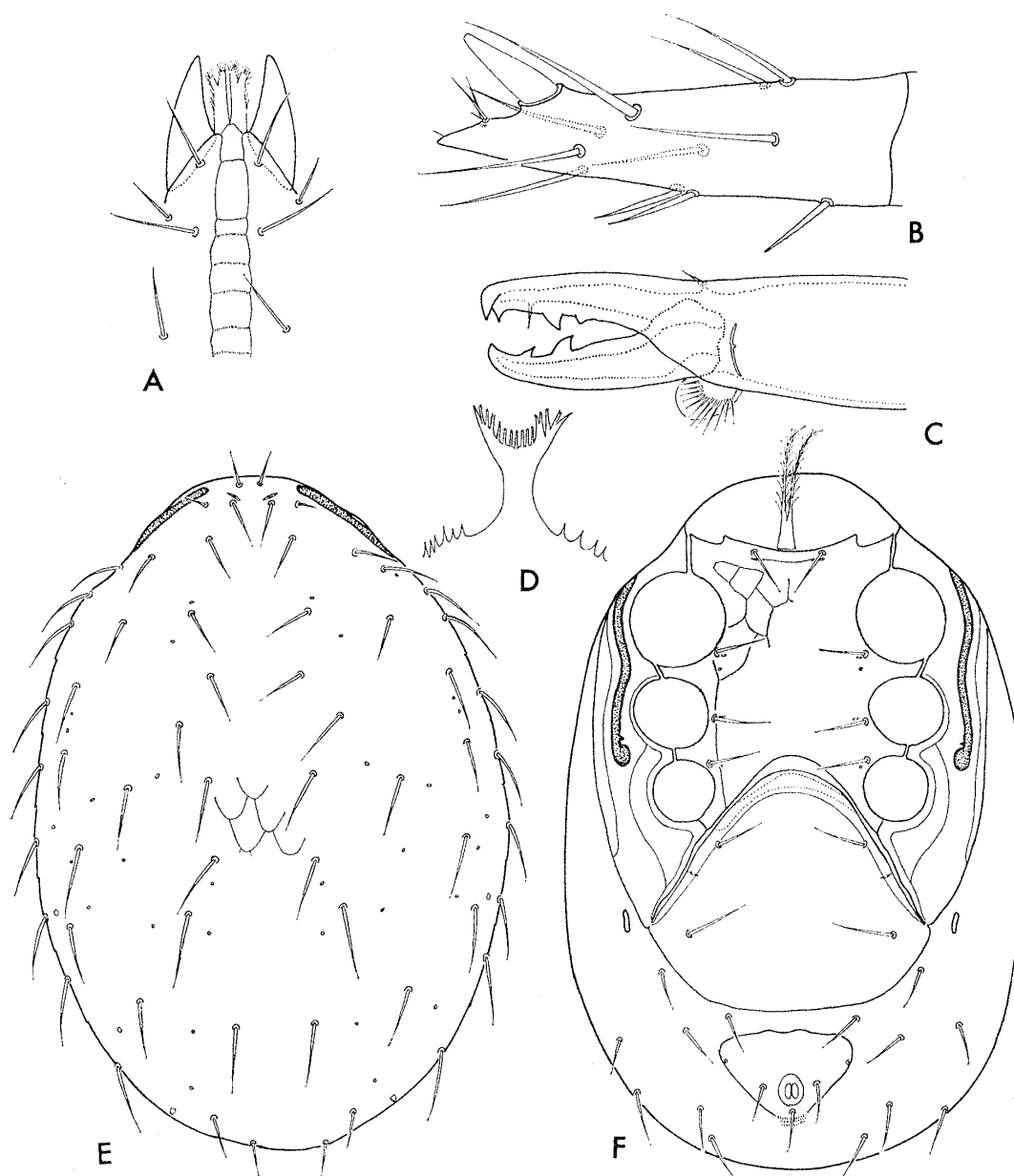


Fig. 2. *Pachylaelaps daruma* sp. nov., female. — A, Venter of gnathosoma; B, tarsus II; C, chelicera; D, epistome; E, dorsum; F, venter.

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